REMARKS

STATUS OF CLAIMS

In response to the Office Action dated July 30, 2007, claim 6 has been amended. Claims 1-6, 10-13, 15 and 16 are now pending in this application. No new matter has been added. Claims 7-9 and 14 are withdrawn from consideration as being directed to a non-elected invention.

OBJECTION TO CLAIMS

Claim 6 has been objected to for having a minor informality.

By this response, claim 6 has been amended to delete "and the" from the calculating step at the location suggested by the Examiner.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 102

I.   Claims 1-5 and 10-12 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Johnson (U.S. Patent No. 5,892,847).

The rejections are respectfully traversed.

Independent claim 1 delineates, *inter alia*:

> …
> calculating a difference between the information represented by each of the bits of the first image data and the information represented by each of the bits of the inversely converted second image data and outputting the difference as first difference data; and
> generating a file including the first difference data and a first parameter, the first parameter identifying the first difference data as being calculated using the first image data and the inversely converted second image data…

Independent claim 10 delineates similar subject mater.

The Examiner maintains that Johnson discloses calculating a difference (via element 1010 of Fig. 34) between the information represented by each of the bits of the first image data and the information represented by each of the bits of the inversely converted second image data and outputting the difference as first difference data (Residue ΔX 1012). Next, the Examiner contends that Johnson discloses generating a file including the first difference data by referring to Fig. 34 and Residue ΔX 1012 being input to and output from storage/transmission 1006. The Examiner contends that Residue ΔX 1012 corresponds to numerals 238 and 240 in Fig. 11 and that a first parameter corresponds to the ID # in Fig. 11. Using this interpretation, the Examiner maintains that Johnson discloses the first parameter identifying (via the ID #) the first difference data (corresponding to 238 or 240 via a matching procedure that has an associated ID #) as being calculated using the first image data and the inversely converted second image data (since the ID # is a compact way of representing different data).

However, Fig. 11 of Johnson does not evince that there is a file generated that includes 238 (or 240) and one of the ID #s with that ID # identifying the Residue ΔX (238 or 240) as being calculated using the first image data and the inversely converted second image data.

As described at Johnson, the residual image is the difference between the reconstructed image and the original image (see column 10, lines 45-47). In addition, column 11, line 61 to column 12, line 29 of Johnson describes:

> In order to preserve the image information lost by the optimized DCT 136, the DCT residual calculator 154 (shown in FIG. 10) computes and compresses the DCT residual. The DCT residual calculator 154 dequantizes in a dequantizer 209 the DCT quantized values 206 stored in the DCT data segment 208 by multiplying the reconstruction values in the CS data segment 204 with the DCT

quantized values 206. The DCT residual calculator 154 then reconstructs the dequantized DCT components with an inverse DCT 210 to generate a reconstructed dY_tau2 miniature 211. *The reconstructed dY_tau2 miniature 211 is subtracted from the original Y_ tau2 miniature 190 to create an r_tau2 residual 212.*

Referring to FIG. 11, it can be seen that the rY_tau2 residual 212 *is further compressed with the AVQ 134*. The technique of vector quantization is used to represent a block of information as a single index that requires fewer bits of storage. As explained in more detail below, *the AVQ 134 maintains a group of commonly occurring block patterns in a set of codebooks 214 stored in the resource file 160*. The index references a particular block pattern within a particular codebook 214. The AVQ 134 compares the input block with the block patterns in the set of codebooks 214. *If a block pattern in the set of codebooks 214 matches or closely approximates the input block, the AVQ 134 replaces the input block pattern with the index*.

Column 13, lines 12-23 describe:

As shown in FIG. 11, *the AVQ 134 compresses the rY_tau2 residual 212, by sub-dividing the rY_tau2 residual 212 into 4x4 residual blocks and comparing the residual blocks with codebook patterns* as explained above. *The AVQ 134 replaces the residual blocks with the codebook indexes that minimize the squared error*. The AVQ 134 outputs the list of codebook indexes to the VQ1 data segment 224. Thus, the VQ1 data segment 224 is a list of codebook indexes that identify block patterns in the codebook. As explained in more detail below, the AVQ 134 of the preferred embodiment also generates new codebook patterns that the AVQ 134 outputs to the set of codebooks 214. The added codebook patterns are stored in the VQCB data segment 223.

Thus, AVQ 134 of Fig. 11 is compressing the residual image (the difference between the reconstructed image and the original image) by comparing an input block with the block patterns in the set of codebooks 214. If a block pattern in the set of codebooks 214 matches or closely approximates the input block, the AVQ 134 replaces the input block pattern with the index. Thus, AVQ 134 compresses the input block information into a list of indexes. The indexes are

decompressed by replacing each index with the block pattern (in the set of codebooks 214) that corresponds to each index.

That is, a compressed input block information of the residual image is decompressed by replacing the index with the corresponding block pattern. This is clearly different from storing a parameter (corresponding to the ID #) identifying the (first) difference data (corresponding to the residual image) *as being calculated using the first image data and the inversely converted second image data*.

More specifically, the ID # corresponding to a block pattern in Johnson does **NOT** identify that rU_tau4 residual 238 (or rX_tau4 residual 240) was calculated using rU_tau4 and rU_tau 4′, as required by independent claims 1 and 10. Therefore, claims 15 and 10-12 are patentable over Johnson.

II.   Claims 6, 13, 15 and 16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnson in view of Yi (U.S. Patent No. 6,778,187).

The Examiner contends Johnson discloses the steps of claim 6 except for:

> said step of converting comprises the sub-step of reducing the first number of bits of the first image data beginning with a least significant bit and continuing in sequence from the least significant bit towards higher order bits until the number of bits of the first image data becomes equal to the second number of bits of the second image data, and said step of inversely converting comprises the sub-step of adding ZERO bits to the least significant bit of the second image data until the number of bits of the second image data becomes equal to the first number of bits of the first image data…

Independent claim 13 recites similar subject mater.

Yi has been relied upon by the Examiner as disclosing this feature, referring to column 8, lines 5-10 and column 6, lines 16-24.

The rejections are respectfully traversed.

Johnson does not disclose "generating a file including the first difference data and a first parameter, the first parameter identifying the first difference data as being calculated using the first image data and the inversely converted second image data" (independent claims 6 ad 13), for the same reason(s) asserted above with respect to independent claims 1 and 10. Yi does not remedy this deficiency of Johnson. Therefore, claims 6, 13, 15 and 16 are patentable over Johnson and Yi.

Furthermore, as noted in the previous response, the difference between SOD and STD provides the ***difference between the number of bits*** of SOD and the ***number of bits*** of STD. In contrast, independent claim 6 (and 13) requires calculating a difference between the information represented by each of the bits of the first image data and the information represented by each of the bits of the inversely converted second image data and outputting the difference as first difference data. The ***difference between the number of bits*** for SOD and the ***number of bits*** for STD is clearly **NOT** a ***difference between the information represented by each of the bits of the first image data and the information represented by each of the bits of the inversely converted second image data***, as required by amended independent claims 6 and 13.

The Examiner has not responded to this argument in the present Office Action.

III.   In view of the above, the allowance of claims 1-6, 10-13, 15 and 16 is respectfully solicited.

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Edward J. Wise (Reg. No. 34,523) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By

Marc S. Weiner
Registration No.: 32,181
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorneys for Applicant